DOCUMENT RESUME

ED 290 308 EC 201 772

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TITLE Use of the Learning Potential Assessment Device in Assessment and Remediation of a Learning Problem.
PUB DATE Feb 87
NOTE 38p.; Paper presented at the Annual International Conference of the Association for Children and Adults with Learning Disabilities (24th, San Antonio, TX, February 25-28, 1987).
PUB TYPE Reports - Evaluative/Feasibility (142)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Case Studies; Cognitive Style; Elementary Education; Emotional Problems; Foreign Countries; *Learning Disabilities; *Learning Strategies; *Metacognition; Teaching Methods
IDENTIFIERS *Instrumental Enrichment; Israel; *Learning Potential Assessment Device

ABSTRACT

A case study was undertaken of an 11-year-old Israeli girl of above average intelligence but manifesting specific learning disabilities in mathematics and related areas. The Learning Potential Assessment Device (LPAD), a measure to identify cognitive deficiencies and strengths and suggest mediation or intervention procedures to alleviate or correct deficiencies, was used. The LPAD highlighted the girl's strengths in the elaborational or thinking phase of the mental act. Specific mediation experiences included stemming impulsivity by using verbal self-mediation and "talking through" problems. Impulsivity and anxiety, the girl's most debilitating problems, were then approached by a six-session instrumental enrichment program intended to bring about an optimum change in behavior, attitude, and work habits. Skills taught in the sessions stressed planning and cognitive awareness and their generalization to non-training situations. Posttests demonstrated improvements in most cognitive areas. Eighteen references are listed. (DB)

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USE OF THE LEARNING POTENTIAL ASSESSMENT DEVICE IN ASSESSMENT AND REMEDIATION OF A LEARNING PROBLEM

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Running Head: Learning Potential

Author Notes

This research was carried out while the authors were on sabbatical at the Hadassah-Wizo Research Institute, Israel. The inspiration and assistance of Professor Reuven Feuerstein and his team are gratefully acknowledged, as is the financial assistance to the senior author of the Human Sciences Research Council, South Africa.

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ABSTRACT

This study constituted a first attempt to document the use of the Learning Potential Assessment Device (LPAD) in the assessment and remediation of a specific learning disability. A case study was undertaken of an 11-year-old girl of above-average intelligence who was manifesting difficulties in mathematics and related areas. The effectiveness of the LPAD was demonstrated in that it specified the child's cognitive deficiencies and strengths, it assessed her optimal performance under appropriate conditions of mediation/intervention, and provided a springboard for the development of an individualised remedial program for her. This program aimed at bridging the schism in special education between process- and content-oriented models. The value of the approach is discussed, as are some implications for the teacher of the mediational procedures associated with the LPAD.

Traditional approaches to psychoeducational assessment are increasingly being regarded as inadequate and invalid bases for affecting psychoeducational change (Adelman & Taylor, 1979, 1983; Feuerstein, 1979; Ysseldyke, 1983). In contrast to the psychometric model and its static, product-oriented approach, Feuerstein and his associates (e.g. Feuerstein, 1971, 1980) are developing and have implemented a dynamic assessment-and-intervention model which tests individual children's learning processes, identifies the specific methods by which they can be taught, and provides for development and modification of cognitive processes. Scholastically impaired children of various social and cultural backgrounds may benefit from such an approach.

In terms of Feuerstein's (1979) theory of structural cognitive modifiability, stress is placed on the ability of all human organisms to engage in learning that will be pervasive in changing their cognitive structures; that will be facilitative of further change; and that will

render them capable of initiating such change. In this context "structures" refers to the cognitive-intellectual and affective schemes that promote adaptations to novel situations, (Scarr, 1981). Beyond the biological/physiological level, the contruction of these schemes, according to Feuerstein (1979), is affected by two modalities of learning: direct learning experience and mediated learning experience (MLE). Through direct exposure, individuals from birth are affected by stimuli that impinge upon them which produce lasting effects in their behavioral repertoires. In mediated exposure, direct experience with environmental stimuli is transformed through the actions of an "experienced, intentioned and active human being" (Feuerstein, 1979, p. 110). Through a range of behaviors, such as selecting, framing, focusing, and feeding back environmental events, the "mediating agent" (e.g. parent, teacher) orients and organises the phenomenological world for the child. In so doing, this caring person transmits appropriate learning sets and habits "which in turn become important ingredients of his

capacity to become modified through direct exposure to stimuli" (Feuerstein, 1980, p. 16). Thus, the provision of MLE is crucial to the "structural cognitive modifiability" of the individual, in that it inculcates in him/her the ability and the disposition to "learn how to learn".

In certain cases, due to lack of interest or accessibility, or because of their own disadvantaged or ambiguous sociocultural status, parents may have been inadequate providers of MLE. In other instances, the child's neurological functioning or personality might render him/her less receptive to MLE. When children receive inadequate MLE, they display cognitive dysfunctions which interfere with learning. The etiology of many school problems can thus be associated with a lack of MLE, or an inability to benefit from it.

The Learning Potential Assessment Device (LPAD) serves as a springboard for the provision, supplementation and enhancement of MLE. Feuerstein (1979) documents various cases and several empirical studies that have demonstrated

the validity and value of the device with children and particularly adolescents, characterised as culturally disadvantaged and/or mentally retarded. Waksman (1983) successfully utilised the LPAD to assess the learning potential of penitentiary inmates. Beasley (1984) attended to the quantification of the LPAD results, which that author identified as a deficiency and an inherent difficulty of the individualised and dynamic, non-standardised approach to testing embodied by the LPAD. There have also been a number of studies indicating the value of the LPAD with deaf children (Braden, 1984; Katz and Buchholz, 1984; Keane, 1983). In their investigation, Katz and Buchholz utilised a case study approach to demonstrate the usefulness of LPAD procedures and mediation strategies for a deaf child in providing comprehensive assessment information leading to a reclassification of her intelligence and to highly specific and prescriptive educational recommendations.

The case study approach utilising the LPAD would be of value for the scholastically impaired child, inasmuch as it would demonstrate the

identification and specification of his/her cognitive deficiencies and strengths, the assessment of his/her optimal performance under appropriate teaching conditions, and the direct relevance of the assessment procedures to the remediation program designed for that particular child. The case study can also provide a detailed examination of the mediator's approach and the subject's responses to remediation. Indeed, no studies have been documented on the use of the LPAD in the sphere of specific learning problems. Accordingly, the case study approach was implemented here to investigate the usefulness of the LPAD in assessment and remedial programming for a child with a learning problem.

METHOD

Subject

Melissa, an 11-year-old girl, was referred to the authors because of difficulties in mathematics and, to a lesser degree, geography. Her performance in other school subjects, notably English studies, was good. The discrepancy between her performance in mathematics and her functioning in other areas led to her being

described as scholastically impaired. A second-order anxiety characterised her behavior in school tasks.

Preliminary tests on the WISC-R indicated an above-average IQ with a superior Verbal Scale and an average Performance Scale score. This discrepancy was associated with a low-average performance on Object Assembly and Block Design, and a just-average result on the Picture Arrangement subtest. On the Verbal Scale, Melissa displayed superior reasoning skills, she also manifested an above average arithmetic reasoning ability, despite her problems in schoolroom mathematics. On the other hand, poor spatial skills were displayed on the Performance Scale. It was regarded as likely that these deficits underlay her difficulties in organising data related to arithmetic and mathematics. The Neale (1958) test indicated that her reading comprehension and accuracy are superior.

Temperamentally, Melissa is quick, warm and affectionate, impetuous and excitable. She is also creative, resourceful, and socially well-adjusted. Her interests include drama and

ballet, and she is a prolific reader. She is highly competitive and mark-oriented. At the time of testing, her difficulties in certain spheres of school work had resulted in anxiety and withdrawal from tasks that she found threatening. These factors appear to have exacerbated her learning problems.

LPAD Battery

Tasks were selected from the LPAD Battery (Feuerstein, 1979) on the basis of preliminary information regarding Melissa's strengths and weaknesses. The tasks are described below.

(a) Set Variations I and II. These comprise a series of variations and elaborations of the original Raven's (1958) Standard Progressive Matrices. Variations I and II differ in degree of complexity. The subject is shown a series of designs and has to supply a missing part selected from a number of alternatives. According to Feuerstein (1979), this tests increasingly complex cognitive operations including analogies, permutations, and logical multiplication. Both Variations I and II include a number of subsets of different analogies. Each subset contains an

initial task on which training is given, with the other analogies within the subset serving as variations of that training analogy.

(b) Organisation of Dots (adapted from Rey & Dupont, 1953). Various patterns of dots are presented, each of which needs to be organised to form a square and a triangle. This tests the capacity of the subject to organise an unstructured field by using and/or learning to use cognitive strategies to correct for confusing perceptual factors.

(c) Numerical Progressions. This task requires extraction and application of the specific rule governing the relationship between numbers in series of progressions of increasing difficulty.

(d) Representational Stencil Design Test (RSDT, adapted from Arthur, 1939). This task requires the child to representationally reconstruct complex designs by identifying, in the correct sequence, the stencils from which they are constituted. The task does not permit the manipulation of stencils. The capacity for abstract and spatial representational thinking is thus tapped.

(e) Complex Figure Drawing (adapted from Rey,

1959). This comprises a complex geometric figure which the subject is asked to reproduce, first by copying the model, and then by memorising it. Evaluation is based on the extent to which a systematic approach is adopted in the execution of the drawings, and the number of details correctly placed and proportioned. The test assesses the capacity of the subject to organise, structure and memorise a complex field.

(f) Associative Recall Test. The test comprises 20 drawings of objects selected for their familiarity, clarity and unambiguity of figural representation. It also presents functional substitutes for the original items, as well as reduction of the stimuli, and a change in the order of their presentation. The subject is required to make associations between the functional substitutes and the original items, as well as between the reduced substitutes and the original items. Delayed recall is involved. The test is a measure of visual and associative memory.

A fuller description of all these instruments can be found in Feuerstein, 1979.

Procedure and General Measures

The preliminary tests mentioned earlier (i.e. the WISC-R and Neale) were undertaken to get an objective picture of the subject. In addition, the Raven's (1958) Progressive Standard Matrices (Sections A-E) involving figural analogies, was administered to obtain a baseline in functioning.

The project itself comprised two parts. Part I involved the administration of tasks from the LPAD Battery. Part II constituted the development of an intervention program for the subject, based on information gained from the LPAD, and utilising successful approaches initiated in Part I.

To ascertain whether there was a general transfer of learning from the LPAD adaptation of the Raven's Matrices (i.e. LPAD Set Variations I and II) to the Raven's itself, the Raven's was again presented after Part II of the project. The Block Design, Object Assembly and Picture Arrangement subtests of the WISC-R were also readministered at the end of the project, to assess the effects of intervention on the areas of less adequate initial performance.

The study was conducted over three months.

Initial testing took place in the first week; this was followed by Part I, which comprised 25 hours of assessment and intervention on the LPAD over 10 sessions of approximately two and a half hours each. Part II followed, and included six, two-hour sessions conducted twice weekly for three weeks. The program that was developed is described in "Results - Part II". Post-testing was carried out a week after the conclusion of the Project.

Pre- and post-testing was carried out by one of the authors while the other two writers between them conducted Parts I and II of the project.

REPORT OF PARTS I AND II OF THE PROJECT

Part I: Learning Potential Assessment Device (LPAD)

Results yielded by the LPAD are largely qualitative. They include a description of Melissa's cognitive deficiencies and strengths, as well as of mediation or intervention procedures developed to alleviate or correct for her deficiencies. Results also reflect outcomes, or Melissa's responses to mediation. These dimensions are elaborated below.

(a) Deficiencies and strengths. These were

identified within the conceptual framework, proposed by Feuerstein (1979), of phases of cognitive activity. The Input phase refers to data-gathering, the Elaboration phase, to problem-solving or thinking, and the Output phase, to expression of communication.

In the input phase, Melissa's recurrent deficiencies included impaired spatial orientation, and unplanned, impulsive and unsystematic exploratory behavior. There was also evidence, in the Set Variations II subtest, of a lack of precision and accuracy in data-gathering, and a difficulty in considering two or more sources of information at once. She tended to deal with data in a piecemeal fashion rather than as a unit of organised facts. In the output phase, two of the three deficiencies manifested by Melissa were the expressive counterparts of her input difficulties; namely, an impaired need for precision and accuracy in communicating responses, and impulsive and acting-out behavior.

Noteworthy was the fact that, on every task, Melissa displayed an absence of deficiencies in the elaborational phase. This was demonstrated, for

example, in her ready grasp of the underlying principles of the tasks, as well as her ability to solve more complex items, while failing on easier ones. This was the case in the Numerical Progressions, where she was able to solve the last item, a complex progression with a three-part formula. Also she demonstrated a good ability in the spheres of categorisation, comparison, hypothetical thinking, and use of logical arguments. Few deficiencies were evidenced, in any of the phases, on the Associative Recall subtest, where here good associative memory provided her with a confidence and a motivation to approach the task competently.

In most other cases her cognitive deficiencies in the input and the output areas were compounded by her high level of anxiety, which further hampered functioning and led to an erratic performance. At the same time, she likes competition and it is important for her to succeed, although she prefers doing so without help, which she finds really difficult to accept. This makes her relatively resistant to direct mediation.

One area where she was not deficient but which

was further bolstered by mediation, was Melissa's planning behaviour (elaborational phase), as is illustrated in Section (b) below. Also, within the input and output phases themselves, Melissa displayed a number of strengths. For example, in the input phase she demonstrated sound receptive verbal tools for discriminating objects, while in the output phase she displayed good expressive vocabulary.

(b) Mediation. The mediator taught Melissa to stem impulsivity by using verbal self-mediation (cf Meichenbaum and Goodman, 1971). This focused primarily on getting Melissa to engage in appropriate explanatory behavior in the input phase, and to avoid "hand-to-mouth" responses in the output phase. In addition, the examiner modelled the verbal self-mediation by "talking through" problems and by re-iterating the appropriate steps required for the task. In order to systematise Melissa's thinking, a plan of action was jointly devised by examiner and child. Known as the "cake plan" (it was developed in the process of baking a cake), it involved the following steps:

(1) What is the problem or task? (2) What information is needed? (3) What is our strategy? (4) Where do we start? (5) What are the rules? (6) How do we check our results?

Further, because of Melissa's difficulty in considering two sources of information simultaneously, she was assisted by being allowed to record the information on the Variations II task in table form. This form of visual support helped considerably in making Melissa feel less threatened and anxious. Another method used to curb anxiety was to encourage Melissa to view the task as a competition and not as a test. In that Melissa has an apprehensive attitude to tasks presented in the numerical modality, she was potentially resistant to mediation here. However, the mediator was able to guide her towards discussing relationships among numbers.

In two instances, namely on the Variations II (final subset), and on the RSDT, the mediator repeated the test following her realisation that her approach to this particular child had been wrong. Her intention was to modify her own behavior in relation to the child. In Variations

II the testing situation was changed into a co-operative relationship, with tester and child each independently writing down their responses as joint participants in a problem-solving situation, sharing insights and strategies with each other after completing the item (post mediation). On the RSDT the examiner realised that she had failed to give the child sufficient support in what was for Melissa an extremely problematic visual-spatial area. On the second administration the examiner used a more dogged and persistent approach, again adopting a co-operative form of presentation. The mediator's repetition of these tasks is quite a legitimate, even desirable, aspect of LPAD administration. It illustrates the flexibility possible with the LPAD, an enormous advantage in testing anxious/slow/ impulsive children. It also demonstrates the explicit recognition of, and correction for, the effects of an examiner's behavior on test performance.

(c) Outcomes. The mediator's supportive attitude and the compensatory activities helped considerably in making Melissa feel less threatened

and anxious, and resulted in a significantly improved performance. Thus, for example, on the Numerical Progressions task her score on the post-test was 74%, an increase of 28% over her initial score on the equivalent pretest of 46%. Moreover, mediation was no longer necessary on the post-test of this task - an indication of Melissa's modifiability. Similarly, on the RSDT, Melissa was able to use the strategies she had been taught for analysing and identifying representationally the sequence of stencils, which resulted in a 50% improvement in her functioning. On the Associative Recall subtest, an area of strength, there was evidence of further learning in terms of increased efficiency, improved symbolisation and retention. Several weeks after the test she was able to recall the associations that she had learnt, highlighting memory as a major strength in her repertoire of learning skills. On the Set Variations I and II her good thinking skills were reflected in her successful completion of most of the items, despite her input and expressive deficiencies. In the one subset which she had found extremely

difficult and which was repeated, she actually improved her performance of 3 out of 10 to 9 out of 10 in the re-administration. It was evident that she had learnt to apply the planning strategies taught and was able to solve the problems independently. Again, on the Complex Figure Drawing, mediation resulted in marked improvement, particularly in her recall of the figure, and her approach became much more systematic. This indicated her considerable modifiability even in an area where she experienced a marked deficiency, namely the visual-spatial area. Finally, in the Organisation of Dots task, the verbal self-mediation resulted in the successful application of appropriate strategies (such as using clues from the mode of presentation of the dots) even in the most complex item, and intervention could gradually be phased out.

(d) Summary. The LPAD highlighted Melissa's strengths in the elaborational or thinking phase of the mental act. The assessment presented evidence of her considerable modifiability (that is, her ability to learn), and her ability to solve complex and abstract problems, under the right stimulus

conditions and when input and output deficiencies are controlled. The deficiencies and strengths identified in this part of the project, together with the forms of mediation evidenced to be effective, formed the basis of the next phase of the study, which is presented below.

Part II: The Moppet Project - an extension of the LPAD into a further mediated learning experience.

Part II implemented the findings of the LPAD, applying them directly to those school subjects in which Melissa failed to achieve. MLE principles guided the teaching approach and there was a deliberate policy of stimulating Melissa's self-awareness of her ability to assume command of her own learning. The LPAD had diagnosed impulsivity and debilitating anxiety at input and output levels as Melissa's most detrimental learning problems. The aim of this part of the project, dubbed the MOPPET project for "Melissa's Own Personal Program for Enriching Tasks", was to provide maximum short term investment to bring about an optimum change in behavior, attitude, and work habits that could be generalised to the unsuccessful scholastic areas.

In line with the Feuerstein approach, the goals of the program transcended the specifics of content involving, as they did, the enhancement of intellective and non-intellective processes. Yet, the content-free instruments of Feuerstein's (1979) Instrumental Enrichment program were deliberately eschewed in favour of schoolroom mathematical and geographical material. There was thus a concern with scholastic content, as well as with underlying, cognitive processes and personal/social concerns, a combination which was aimed at bridging the longstanding schism in special education between approaches which concentrate on content, and those dealing with underlying processes or sub-skills.

Departure points for the six Moppet sessions were the areas of Melissa's interest and strength in the social and domestic fields. Here, activities (e.g. planning a party or concert, facilitating bed-making) were selected as models for exemplifying and teaching the use of the structured format to be utilised for scholastic tasks. That same format was extended into her competent English-language arts, towards the goal of correcting deficiencies in

mathematics and geography.

The first two sessions dealt with planning per se, while sessions two to six were termed "cognitive awareness". These sessions highlighted cognitive strategies for circumventing deficiencies and emphasising her own strengths. Skills and techniques for problem-solving within the specific subjects were taught, and then implemented within the framework of the Moppet plan. This referred to the processes of goal-setting and goal-achieving that had been taught in the planning phase. Based on the list of cognitive functions from the Instrumental Enrichment text, planning steps were identified as: goal-setting, data gathering, logical organising and sequencing, task implementation and checking. Thus the activities and the learning models developed in the first two sessions were generalised to the specific subject areas of geography and mathematics, as shown in Table 1.

Place Table 1 here

An essential part of each session was the final summary, which emphasised the metacognitive aspect

of the program by requiring Melissa to think about her thinking. She was asked to reflect on her approach to, and implementation of, activities, select her favoured techniques for the particular tasks, and evaluate her control of her input and output behavior. This was often followed by discussions on ways in which she might have prevented any deficiencies. Selective summaries were incorporated into a work file for future reference.

The parameters of mediated learning experience which were most strongly emphasised were the regulation and control of behavior, the transferring of a feeling of competence, and mediated meaning (i.e. communication of the significance or value of an activity). The latter was facilitated by Melissa's mature insight into her own behavior. On this basis, the purpose of the project and all its components was fully discussed with her and decisions were made by agreement. The mediation also consisted in alleviating anxiety by altering the child's perception of threatening scholastic content and by teaching coping techniques. It involved the use of Melissa's modalities of

strength and the recognition of cognitive strengths and potential. Melissa's co-operation, her keenness to please and to succeed, as well as her creative flair were all mobilised by the mediator in attempts to overcome the deficiencies diagnosed by the LPAD.

PRE-POST TEST RESULTS

Results on the Raven's matrices and on subtests of the WISC-R, obtained before and after the two phases of the project, are presented graphically below.

Place Figure I here

As depicted in the graphs, there was some improvement in all areas except on Section E of the Raven's and on the Block Design subtest of the WISC-R.

On the Raven's Section E - a series which requires a particularly high level of analogical thinking - Melissa's score remained the same. In any case, Melissa had been able to identify more than half the items in the initial test, suggesting

advanced problem-solving skills. A comparison of Melissa's performance on the Raven's to the British norms established for this test reveals that she scored at the 85th percentile on the pretest and above the 95th percentile on the post-test. On the Block Design subtest of the WISC-R, her persistently low-average score suggested the pervasiveness of her relative difficulty in abstract spatial orientation. On the other hand, Melissa's performance on the concrete spatial task of the Object Assembly subtest (WISC-R) did improve several scale points. In addition, her functioning on the Picture Arrangement subtest of the WISC-R improved considerably - from an average to an above-average level. This latter improvement could have been a direct result of her control of impulsiveness and the alleviation of her visual-spatial difficulty, which brought her performance on the Picture Arrangement subtest more in line with her potential in the social intelligence measured by this subtest which, from other evidence, is good.

DISCUSSION

This study has demonstrated the usefulness of the LPAD for both assessment and intervention in the area of learning problems. The LPAD has provided insight into the behavioral and cognitive processes that underlie a child's particular areas of scholastic strength and weakness. The unique approach also offered an opportunity within the test situation to control both input and output so as to allow the child's elaborational or problem-solving abilities to be manifested. It was thus demonstrated that the specific areas of weakness from which a given learning disabled child suffers can be identified, and controlled, bypassed, compensated for, or alleviated.

The implications for the teacher are that the child with a learning problem can respond well to mediation. The key feature of such mediation is metacognition, or the conscious awareness of processes of cognition and the monitoring and controlling of these processes, (Babbs and Moe, 1983). This applies to both teacher and child and to their interaction. Thus, the teacher

should be aware of the underlying dimensions of his/her interaction with the child which are most likely to promote or hinder learning and performance. In addition, he or she should help the child monitor his or her own functioning, inasmuch as the child's ability to reflect upon his/her problem-solving strategies is a crucial factor in bringing about change, and in ensuring that the new approaches learnt transcend the specific situation in which this learning occurs, and generalise to a wider range of behavior.

This study achieved its aim of using the LPAD in the demonstration of cognitive modifiability, and as a basis for remedial programming for a scholastically impaired child. There were, however, a number of limitations to the study, including the absence of a measure of the transfer of improved functioning to actual improvement in scholastic skills. The intervention program was limited both in time and scope. A more extended intervention would be necessary to meet the requirements of permanently affecting the scholastically impaired child's functioning. This is envisaged in a follow-up study.

Finally, while this single case study afforded an in-depth examination of the techniques and results associated with the LPAD, it also presented an obvious limitation. This relates to the absence of any controls that would allow us to rule out the possibility that alternative approaches or factors might lead to a similar degree or type of change. Considerable subjective and interpretative data are necessarily provided here. Nevertheless, the case study has served as a source of information and ideas that can now be put to empirical test. A controlled investigation could be implemented which would compare the effects of conventional remedial therapy, based on product-orientated assessment, with those of a remedial approach based upon the principles of mediated learning experience and generated by the Learning Potential Assessment Device.

REFERENCES

Adelman, H.S. & Taylor, L. Initial psychoeducational assessment and related consultation. Learning Disability Quarterly, 1979, 2, 52-64.

Adelman, H.S. & Taylor, L. Learning disabilities in perspective. Glenview, Illinois: Scott Foresman, 1983.

Arthur, G. A Point Scale of Performance Tests: Clinical manual. New York: Commonwealth Fund, 1930.

Babbs, P.J. & Moe, A.J. Metacognition: a key for independent learning from text. The Reading Teacher, 1983, 36, 422-426.

Beasley, F.D. An evaluation of Feuerstein's model for the remediation of adolescents' cognitive deficits. Unpublished doctoral thesis, University of London, 1984.

Braden, J.P. LPAD applications to deaf populations. In: D.S. Martin, (Ed.). Working Papers from the International Symposium on Cognition, Education and Deafness, Washington DC, June 5 - 8.

Feuerstein, R. The dynamic assessment of retarded performers. Baltimore: University Park Press, 1979.

Feuerstein, R. Instrumental enrichment. Baltimore: University Park Press.

Katz, M.A. & Buchholz, E.S. Use of the LPAD for cognitive enrichment of a deaf child. School Psychology Review, 1984, 13, 99-106.

Keane, K.J. Application of mediated learning theory to a deaf population: a study in cognitive modifiability. Unpublished doctoral thesis, Columbia University, New York, 1983.

Meichenbaum, D.H. & Goodman, J. Training impulsive children to talk to themselves: a means of developing self-control. Journal of Abnormal Psychology, 1971, 77, 115-126

Neale, M.D. Analysis of Reading Ability. Manual of directions and norms. London: McMillan, 1958.

Raven, J.C. Standard Progressive Matrices, Sets A to E. London : H.K. Lewis, 1958.

Rey, A. & Dupont, J. Organization des groupes des points en figuires geometriques simples. Monographs de psychologie applique, 1953, 3.

Rey, A. Test de copie et de reproduction de memoire de figures geometriques complexes. Paris, Centre de psychologie applique, 1959.

Scarr, S. Testing for children: assessment and the many determinants of intellectual competence. American Psychologist, 1981, 36, 1159-1166.

Waksman, M. Assessing the learning potential of penitentiary inmates: an application of Feuerstein's Learning Potential Assessment Device. Journal of Correctional Education 1983, 34, 63-69.

Ysseldyke, J. E. Current practices in making psychoeducational decisions about learning disabled students. Journal of Learning Disabilities, 1983, 16,226-233.

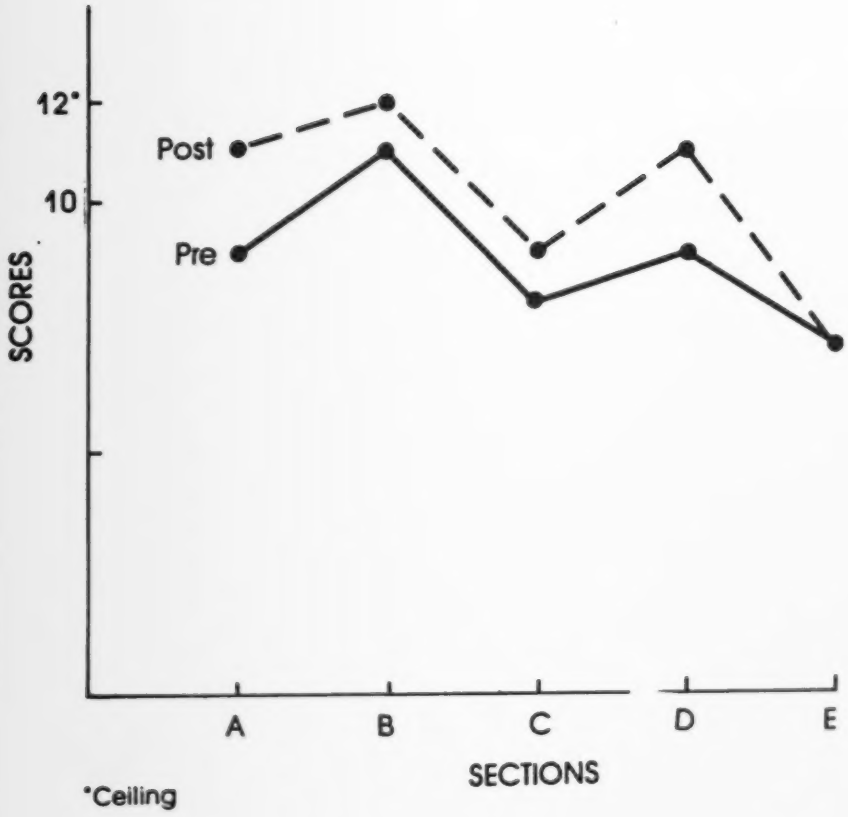
TABLE 1 Application of the Moppet Plan to social and scholastic tasks

MOPPET PLAN	SOCIAL TASK	GEOGRAPHICAL TASK	MATHEMATICAL TASK
1. GOAL SETTING	To arrange an ethnic party for 18 friends	1. To find Kenya in the atlas, and 2. from the map alone, work out the probable climate, crops, industries and occupations	To simplify mixed fraction
2. DATA GATHERING	List: guests food drinks entertainment decorations costumes venue, time, date	Use index - page number - iTude Brothers (Lat- & Long-) Decide - zone (tropical, temperate) - build (mountains, lowlands, uplands...) Look for - other information in atlas (maps of rainfall/ vegetation etc)	Sort out the jargon: - mixed fraction = whole and parts - denominator = name of family - numerator = number of the parts - improper = Top Heavy, therefore he is hiding whole numbers
3. LOGICAL ORGANISING	Plan the order of tasks: when to - send invitations - buy provisions - practise entertainment - make things: ahead, on the day etc.	Plan the jigsaw puzzle, step-by-step, to relate: - build to climatic zone - climate to vegetation and crops - crops to industries	What kind of answer is expected? Plan the order of steps: What do I do first? And then?
4. TASK IMPLEMENTING	Do the above at times planned	Do the above, in regions: e.g. region on Equator but high, therefore cool to cold: possible natural vegetation; tall trees, therefore forestry occupations· probable crops: tea/coffee, therefore farming occupations	Do the above, following the plan as laid out.
5. CHECKING	Check off from lists Finalise last minute things.	Check your jigsaw puzzle from the text book. Reward yourself.	Check: does it make sense? Go backwards to check Check with calculator.

FIGURE 1 Pre- and post-test results on baseline measures

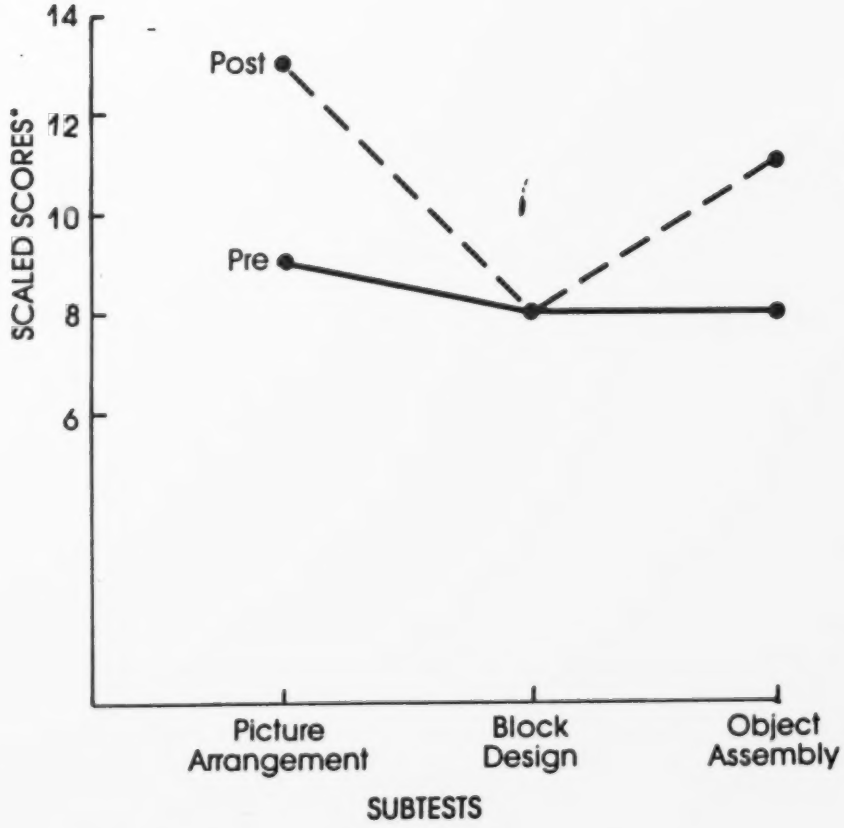
P T O

a. Raven's Progressive Matrices



*Ceiling

b. Wechsler Intelligence Scale for Children - Revised (WISC-R)



(*6-7 = Below Average; 8-12 = Average; 13 = Above Average; 14+ = Superior)